



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,172	12/21/2001	Satoru Miyamoto	60093-B CCD	6113

7590 03/01/2002
Christopher C. Dunham
c/o Cooper & Cunham LLP
1185 Ave. of the Americas
New York, NY 10036

EXAMINER

RODEE, CHRISTOPHER D

ART UNIT	PAPER NUMBER
----------	--------------

1753

4

DATE MAILED: 03/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,172

Applicant(s)

MIYAMOTO ET AL.

NG-4

Examiner

Christopher D RoDee

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 9-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 26-33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/384797.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-8 & 26-33, drawn to a toner and a toner supply container, classified in class 430, subclass 110.
- II. Claims 9-21, drawn to a method of using the toner, classified in class 430, subclass 45.
- III. Claims 22-24, drawn to a method for making the toner, classified in class 430, subclass 137.
- IV. Claim 25, drawn to an apparatus for making the toner, classified in class 241, subclass 24.28.

The inventions are distinct, each from the other because of the following reasons:

Inventions III and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as forming toner particles having the requisite circularity by a suspension polymerization process without classification, mixing fluidity-imparting agents with the produced toner particles in a container containing surfaces such as screens to break-up toner agglomerates, and then shaking the container to mix the toner with the fluidity agent.

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product

as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in another and materially different process such as forming a tri-level electrophotographic image on the surface of a photoreceptor where there are three different charges on the surface of the photoreceptor (i.e., a positive charge, a negative charge, and a discharged area) and developing each of the charged areas with toner of each of two specific colors, recharging the photoreceptor to a uniform level of charge, forming a charge pattern on the surface of the photoreceptor, and developing the charge pattern with a third color of toner, followed by transfer of the toner to a receiver sheet.

Inventions III and IV are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus can be used to practice another and materially different process such as a process that does not meet the conditions set forth in the formula of claim 22.

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as forming a coating material for electrostatically painting a surface (i.e., no imaging takes place). See MPEP § 806.05(d).

Inventions I & II and Invention IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention IV has separate utility such as for forming toner that has characteristics outside the scope of the toner of group I or the process of using this toner in group II. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Christopher Dunham on 27 February 2002 a provisional election was made with traverse to prosecute the invention of group I, claims 1-8 & 26-33. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-25 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(l).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear in the above noted dependent claims if applicants are claiming the additional toners required to form the set or if some other meaning is intended. The preamble appears to limit "the toner" (i.e., one of the at least yellow, magenta, or cyan toner) to only the toner, but the

Art Unit: 1753

remainder of the claim indicates that this toner is in some association with the other colors of toner. Clarification is requested.

Claim Rejections - 35 USC §§ 102 & 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5, 7, 26-28, 30, and 32 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Karaki *et al.* in US Patent 5,912,101. Karaki is the equivalent of EP 869 399 cited in the IDS.

Karaki exemplifies toners having toner particles and a fluidity agent such as hydrophobic silica of a size of 0.02 μm (Examples 1 & 2) and 0.015 μm (Example 3). The produced toners have average circularities such as 0.94 (Example 3), 0.95 (Example 1) and 0.96 (Example 2). The particle size distributions of the exemplified toners indicate that nearly 100% of the toners have sizes below 25 μm (500 mesh - see spec. p. 18) and have an average particle size (50% cumulative) of below 9 μm noting the data in Tables 2-4. Thus the examples' toners appear to inherently have the requisite residue of the instant claims. Because the toners of the examples have the required circularity, appear to have the required residue, and contain a fluidity agent having characteristics disclosed and claimed as appropriate to the instant invention it appears that the reference toners inherently have the claimed ratio Z. Note that Example 5 appears equally applicable to the claims.

The toner **163** is placed in a developing assembly **151** having a rotary developing sleeve **156** containing a magnet **165**. This assembly functions as a rotary toner supply container and is free of a rotary agitating blade. See Figure 14, the description in column 18 of the Figure, and the discussion of the invention's toner supply container on specification page 46 that discusses

Art Unit: 1753

the rotation of the development sleeve with magnetic brushes. This construction is present in the reference (magnet **165** produces a magnetic brush).

When a reference discloses all the limitations of a claim except for a property and the Examiner cannot determine whether or not the function inherently possesses property which anticipate or render obvious the claimed invention but has reason to believe the property is present, it is proper to shift the burden of proof to applicants to establish whether or not the property is inherent. See *In re Fitzgerald*, 205 USPQ 594.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ota in US Patent 5,240,803 in view of Inaba *et al.* in US Patent 5,827,632, further in view of *Handbook of Imaging Materials* to Diamond, p. 168-9, 178-81.

Ota exemplifies a toner in Example 4 having a volume average diameter of 11.0 μm , a circularity of 0.96, and a dispersion (D_{25}/D_{75}) of 1.55 and a toner in Example 5 having a volume average diameter of 7.1 μm , a circularity of 0.96, and a dispersion (D_{25}/D_{75}) of 1.51. Because of the narrow degree of dispersion it appears that the toners of these examples have residue values for 500 mesh (i.e., 25 μm) within the scope of the claims. Toners thus prepared are mixed with carrier particles to form a developer. It appears that the toner particles inherently have the residue value of the instant claims because they have the size and circularity of the instant invention and a small dispersion value which indicates that most of the particle sizes are near the average value.

The reference does not specify the addition of fluidity agents to the surface of the toner.

Inaba discloses a combination of fluidity additives usefully included in a toner compositions where the toner has sizes of from 1 to 9 μm . These additives improve transferability of the toner to a transfer-receiving material or via an intermediate transfer material (col. 1, l. 64 - col. 2, l. 6). Useful fluidity additive packages include hydrophobicized titania

having a size of 43 to 49 nm and hydrophobicized silica having a size of 31 to 43 nm (Table 1). Specifically note the compositions of Examples 2-4 where 1.2 wt. % of titania and 0.8 wt. % of silica is used. Toners thus prepared are mixed with carrier particles to form a developer.

Diamond discloses the background of the art noting the conventional use of surface additives (§ 4.2.4) to increase fluidity (i.e., flow properties) of the toner. The text also discusses the use of charge control agents to optimize the charge level and rate of charging for toners (§ 4.2.3). Diamond also states that it is a well known desire in the art to obtain a the requisite charge as quickly as possible (p. 180, § 4.3.4, ¶3) and to obtain as narrow a particle size distribution as possible to reduce dirt in the machine environment (p. 178, § 4.3.3). Diamond notes the use of cyan, magenta, and yellow pigments to form a full color toner image (§ 4.2.2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the fluidity agents of Inaba to the toner composition of Ota because Ota discloses small toner particle sizes such as 7.1 μm in Example 5 as desired in that invention and Inaba states that such small toner sizes have problems with transfer to a final or intermediate receiver. Inaba advises the artisan that through the use of fluidity agents as disclosed and exemplified these problems in small toners can be reduced. Thus the skilled artisan, based upon the art as a whole, has ample reason to incorporate the additives of Inaba into the toner of Ota to obtain the benefits of transferability and cleanability disclosed by Inaba for small sized toners. Diamond supports the inclusion of these components in Ota by demonstrating that fluidity additives are well known in the toner art. The artisan would have found it obvious to optimize the toner's particle size distribution to as narrow a value as possible because this is known in the art to reduce dirt and optimize copy quality (Diamond, *supra.*; pending claim 8). Such a narrow size distribution would motivate the artisan to minimize the "residue" value of the instant claims if this value is not inherent to Ota's composition. The artisan would also have found it obvious to optimize the toner's ability to obtain a quick, stable charge of necessary magnitude

Art Unit: 1753

(i.e., charge rise-up; pending claim 3) because Diamond teaches that this is important to ensure that the toner is properly charged when it reaches the photoreceptor.

Claims 1-8 and 26-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Karaki *et al.* in US Patent 5,912,101 in view of Inaba *et al.* in US Patent 5,827,632, further in view of *Handbook of Imaging Materials* to Diamond, p. 168-9, 178-81.

Karaki was discussed above. This rejection is applied if the primary reference does not inherently possess the claimed residue value. Additionally, Karaki does not disclose the claimed combination of fluidity additives in pending claims 4 and 29, the additives of claims 6 and 31, and the amount of toner specified in claims 8 and 33.

Inaba and Diamond are relied upon for those features discussed above.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the fluidity agents of Inaba to Karaki's toner because Karaki discloses small toner particle sizes having hydrophobic silica additives such as seen in the examples and Inaba states that such small toner sizes have problems with transfer to a final or intermediate receiver. Inaba advises the artisan that through the use of fluidity agents as disclosed and exemplified these problems in small toners can be reduced. Thus the skilled artisan, based upon the art as a whole, has ample reason to incorporate the additives of Inaba into the toner of Karaki to obtain the benefits of transferability and cleanability disclosed by Inaba for small sized toners. Diamond supports the inclusion of these components in Karaki by demonstrating that fluidity additives are well known in the toner art. The artisan would have found it obvious to optimize the toner's particle size distribution to as narrow a value as possible because this is known in the art to reduce dirt and optimize copy quality (Diamond, *supra.*; pending claim 8). Such a narrow size distribution would motivate the artisan to minimize the "residue" value of the instant claims if this value is not inherent to Karaki's composition. The artisan would also have found it

Art Unit: 1753

obvious to optimize the toner's ability to obtain a quick, stable charge of necessary magnitude (i.e., charge rise-up; pending claim 3) because Diamond teaches that this is important to ensure that the toner is properly charged when it reaches the photoreceptor.

Conclusion


The rejections applied are the same as given in the parent applications. Applicants have not submitted any amendments to change the scope of the claims or given any reasons for traversal of the rejections as originally presented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 703 308-2465. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

cdr
February 27, 2002


CHRISTOPHER RODEE
PRIMARY EXAMINER